

onto the carbon black ahead of the pelletizing machine or in the first third of the pelletizing machine.”

See page 5, lines 14-16, which speaks of obtaining “good homogeneity of incorporation”.

Applicants submit that the application in the above sections provides an adequate written description for use of the expression “homogeneous distribution” in the claims. Therefore, applicants request withdrawal of this rejection.

The rejection of Claim 30 under 35 U.S.C. § 103(a) as unpatentable over the *Linde* patent (US 6,803,026), in view of the *Linde* patent (US 5,797,988) and *Walsh* (US 4,162,997) is traversed and reconsideration is respectfully requested.

Claim 30 is drawn to a beaded carbon black comprising carbon black, a wax, and a synthetic oil.

Linde ‘026 teaches that one or more liquid binders are preferred for use in the pelletization process for carbon. Polyols, polyethers, polyesters, oils, water and aqueous solutions of polymeric salts and molasses are listed in col. 2, lines 55 to 59. *Linde* ‘026 also teaches that stability of the pellets can be increased by coating with a thin layer of such materials as waxes, polyethers, polyesters, polyolefins and polyvinyl alcohols; see col. 1, line 66 to col. 2, lines 1-3. The examples in tables 1 and 2 of *Linde* ‘026 show the combination of polyethylene glycol and ammonium lignin sulfonate, the latter being a dispersant as disclosed in col. 2, lines 59-62. No examples show use of a wax or resin combined with a synthetic oil to function as pelletizing agents.

Linde ‘988 discloses use of a synthetic oil (machine oil) as a binder for carbon black; see the examples and table 1.

As the *Linde* patent '026 does not disclose the use of a synthetic oil, the second *Linde* patent, '988, is relied on for use of synthetic oils as a binder. It is understood that the position in the Official Action is that it would have been obvious to one of ordinary skill in the art to select synthetic oils and waxes/resins as the pelletizing agents for preparation of the carbon black pellets of the primary reference. Applicants respectfully submit that the Official Action fails to set forth any reason, suggestion, or motivation whereby a person skilled in the art would be lead to incorporate a synthetic oil into the composition of the primary reference, *Linde*, '026. Moreover, even if the teachings of the two *Linde* patents are combined, the result would not arrive at applicants' invention. Nor would the skilled artesian expect to obtain the results described in this application.

The comparative data in the present application, including Table 3 on page 9 of the application shows Comparative Example 1 using just synthetic oil as the pelletizing agent and Comparative Example 2 using just wax as the pelletizing agent. In clear contrast to the two comparative examples, Example 3 according to the invention which uses a combination of synthetic oil and wax, as a pelletizing agent distributed throughout the pellet shows a clear and unexpected difference in properties such as individual bead hardness, a lower attrition mill dispersion at 15 minutes and good flowability of printing ink.

The Official Action notes that no comparative evidence has been presented with respect to non-synthetic oils and the effect thereof on bead carbon black. A comparison between carbon black pelletized with a non-synthetic oil would be far less germane to the issue of the unexpected results obtained when using a combination of a synthetic oil and wax. Applicants submit that the

comparative data herein where all factors are held constant except for the combination of synthetic oil and wax clearly is the most relevant comparison and shows an expected result.

To compare the combination of synthetic oil and wax to the sole use of a non-synthetic oil would introduce another variable and would be like comparing apples and oranges. Applicants believe they have submitted the most relevant evidence on the issue of the difference between using a combination of synthetic oil and wax compared to the use of either one by itself.

The data from Table 3 is interpreted on page 12, beginning at line 13. Particular attention is invited to the discussion beginning at line 22 which points out that the beaded black according to the invention which is represented by Example 3 displays advantages over the oil pelletized carbon blacks shown in Comparative Example 1 and the wax pelletized carbon blacks shown in Comparative Example 2. The total bead hardness, a characteristic of the pigments including individual bead hardness and the bead strength, is clearly increased. The improvement in bead hardness and bead strength in comparison to the Comparative Examples 1 and 2 can be achieved while still retaining good dispersibility of the pellets. These results could not have been predicted from the combination of references relied on.

At the top of page 13, it is pointed out that the dispersibility in attrition mill dispersion and flow behavior are improved in comparison to the carbon blacks produced only with oil or only with wax.

Thus, it is seen that the data in the application shows a synergistic effect that is an improvement that could not have been predicted based on the performance characteristics of the individual comparative examples.

The *Walsh* reference adds nothing of significance to the record. Clearly, the reference would not suggest that such a significant difference would arise from the beaded black of this invention. None of the references enable a person skilled in the art to predict the success and performance characteristics of the beaded black as demonstrated by Example 3.

Accordingly, it is respectfully submitted that no *prima facie* case of obviousness has been presented by the cited references. The references taken together fail to lead persons skilled in the art to form a homogeneous distribution of the oil/pelletizing additive mixture across the cross-section of the carbon black bead and certainly would not enable the skilled artisan to expect the results described by the comparative results of record herein. And if, for the sake of argument, a *prima facie* case of obviousness has been established, the evidence of record of unexpected results has rebutted that presumption.

Applicants request favorable reconsideration of the application at the Examiner's earliest convenience.

Respectfully submitted,

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